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RUSSIAN EXPANSION AND THE LONG STRUGGLE FOR OPEN PORTS*

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FOR nearly five hundred years Russia has been making tremendous efforts to secure shoreline. So real has been the need and so keen the realization of it, that practically all the international relations of the Russian Government can be traced to this source. Indeed, it would be difficult to find in the history of nations another case in which the lack of a single physical feature has exerted so controlling an influence as has the need of shoreline in Russian national and international life.

Before attempting to show the close relation existing between the important facts of Russian history and her lack of desirable sea coast, it may be well to note that such a subject may be considered either as history or as geography, according as the historical or geographical factors are kept uppermost in mind. It is the purpose of this article, however, to view the facts from the standpoint of geography by keeping the causal relation constantly in mind and by selecting only those facts of history which have to do with the physical feature under discussion.

Russian history practically begins with the reign of Ivan the Great, 1462-1505, for it was during his reign that the Russian people were able to break away from Tartar control, and under the progressive leadership of Ivan to develop into a powerful nation. But her development as a European power and as a commercial nation was greatly hampered if, indeed, not quite prevented, for the reason that her boundaries did not reach the sea in any direction. She was shut off from the Baltic Sea by Poland and by Finland, which was then a part of Sweden, from the Black and Caspian Seas by the Turks and the Tartars, while the region to the north bordering the Arctic Ocean was as yet unexplored, as was the wilderness of Siberia to the East. Thus it is readily seen that in order to obtain harbors it was necessary for expansion to take place in the direction of the seas above mentioned. This would necessarily involve the Russians in wars with the peoples whose lands bordered those seas.

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Later, with the exploration and settlement of Siberia, expansion southward along the Pacific coast meant conflicts with China, and afterward with Japan, while in southern Asia expansion southward toward the Arabian Sea and the Persian Gulf meant opposition by Persia and by Great Britain, whose interests in southern Asia would be threatened in case Russia should obtain an outlet to the sea.

Russian Expansion Under Ivan the Terrible

The first ruler to extend the early boundaries was Ivan the Terrible, who defeated the Tartars of Kazan and Astrakhan, thus gaining possession of the entire length of the Volga and extending the limits of the Russian Dominions to the shores of the Caspian Sea. In attempting to push his boundaries toward the Baltic and the Black Seas—in which venture he was unsuccessful—this ruler had two purposes in mind; first, to gain access to friendly European nations for the purpose of securing allies against Poland; and second, to share the progress and civilization of Europe. It was also during the reign of Ivan that the White Sea was discovered by the English while searching for a north-east passage to India. As an immediate result, the port of Archangel was founded through which the Russians carried on trade with the English. Another noteworthy project beginning at this time was the exploration and colonization of Siberia. The eastward movement was so rapid that in a little more than fifty years Russian territory was extended from the Urals to the Pacific Coast.

Work of Peter the Great

Such were the conditions in 1682 when there came to the throne of Russia the great genius, Peter the Great. He at once felt the need of "windows to look out upon Europe" or, in other words, the need of outlets by sea, which would allow Russia opportunities of travel and transportation equal to those of her neighbors. Peter determined, therefore, to wrest the Baltic from the Swedes and the Black Sea from the Turks. He sailed down the Don and captured Azov, which gave him control of the Sea of Azov. About the same time, 1698, he sent young nobles to England, Holland, and Italy and forbade their return until they had mastered navigation. Not satisfied with this preparation for the future, Peter himself went to Holland and labored in the shipyards of that country that he might have a personal knowledge of shipbuilding.

It would seem that the young ruler must have had absolute confidence in Russia's ability to gain water front, for at that time, the extent and possible uses of her shores would hardly warrant the expenditure of time and energy which he and his nobles were making for the acquisition of knowledge of navigation.

Upon Peter's return from abroad he turned his attention to the Swedish possessions separating Russia from the Baltic. He defeated Charles XII of

Sweden, but even before the close of the war, and, indeed, while the outlook for the future was very unfavorable, he occupied a considerable strip of Swedish territory on a portion of which he began to build the city of St. Petersburg. The treaty of Nysted, 1721, gave Russia undisputed possession of the Baltic lands which had been taken from the Swedes, and for this reason, together with the prestige of victory, had the effect of placing Russia among the leading powers of Europe.

A little later, as a result of difficulties with Persia, Russia obtained control of the land on the southeast shores of the Caspian Sea, and thus brought that body of water within Russian control.

The strip of land acquired as a result of war with Charles XII bordered the eastern and southern shores of the Gulf of Finland and extended south along the Baltic coast as far as Riga. During the reign of Empress Elizabeth, Russia seized from Sweden another piece of land bordering the north-eastern shores of the Gulf of Finland, thereby increasing her facilities for reaching the Baltic, and by means of that sea, the other countries of Europe.

Expansion Since Catherine the Great

Under Catherine the Great, 1783, Russia annexed the Crimea, thus giving her dominion on the Black Sea. During the same reign, in consequence of the division of Poland, the Russian shoreline was extended on the Baltic for a distance of about 300 miles in the most advantageous directions, namely, toward the south and west.

The Congress of Vienna, following the downfall of Napoleon, left the boundaries of Russia in Europe practically what they are today. The commercial inadequacy of the shores included within these boundaries may be realized when we remember that Archangel is closed by ice more than half the year, St. Petersburg for five months, and that the outlet of the Black Sea to the Atlantic is controlled by Turkey and Great Britain.

Appreciating fully these disadvantages of her European shoreline, Russia has been pushing toward the sea in other directions. Although the acquisition of Siberia included vast stretches of shoreline along the Artic Ocean, yet the harbors are of little importance in that they are closed by ice for a great portion of the year; the hinterland is either barren or far removed; and other commercial regions are not readily accessible. The Pacific shoreline of Siberia has practically the same disadvantages as that of the Arctic, with the exception that it extends southward and offers possibilities of expansion in that direction. Hence it was not surprising that Russia should turn her attention to this portion of her domains with the view of extending her territory and securing desirable harbors.

Efforts Along the Pacific

In 1858 a treaty between China and the governor of Siberia made the Amur River the dividing line between the two countries. The most south-

ern port for Russia within this boundary was Nikolaievsk with a harbor like Archangel, closed by ice more than half the year. The necessity for a port with warmer waters was evident, so the next year at a time when China needed the friendship of Russia, she gave Russia the right to occupy, without ownership, a strip of land bordering the Japan Sea and including the entire coastline of Manchuria north of Korea. By this move China was deprived of all Manchurian harbors north of Korea. A short time after, while China was in a helpless condition, Russia by a stroke of the pen made this maritime province her own and thus acquired Vladivostok, a port 10 degrees farther south than Nikolaievsk, yet closed by ice for more than a month and a half, and having a further disadvantage of being approached only through straits controlled by Japan.

Not satisfied with the slight advantage thus gained, Russia was not long in fixing her attention upon a still more desirable Manchurian harbor, Port Arthur, situated at the southern end of Liao Tung peninsula and commanding Pechili Gulf, Gulf of Liao Tung and the Yellow Sea. The victory of Japan over China in 1895 gave Russia her opportunity. The treaty made at the close of the war gave to Japan not only Korea, but the Liao Tung peninsula including Port Arthur. This great Japanese victory came as a surprise to the whole world, but particularly to Russia, for here was Japan gaining the very ports she had intended for herself. She at once prevailed upon France and Germany to join her in preventing Japan from annexing any of continental China. Consequently Japan was obliged to return Liao Tung to its former owner. For this act each of the allies received rewards, Russia's being the right to construct the Trans-Siberian railroad through Manchuria to Vladivostok. Soon after, with China unable to prevent it, Russia secured the right to construct a branch road from Harbin to Port Arthur, and in 1898 obtained the lease of the Liao Tung peninsula for 25 years with the right to garrison forts and station fleets in the harbors. Thus Russia came into possession of the very regions which by intrigue she had prevented from falling under Japanese control. It was not, however, until Russia began to encroach upon Japanese rights in Korea, that Japan, after futile negotiations, declared war against Russia. The Treaty of Portsmouth, 1905, following the war, transferred the lease of the Liao Tung peninsula from Russia to Japan thereby making Vladivostok again Russia's southernmost harbor on the Pacific. Thus Japan, through the superiority of her army and navy, was able to thwart ambitions which Russians have fostered for more than fifty years. The significance of this fact is made apparent when we remember that her southern boundary on the Pacific today is just what it was in 1860.

Expansion Toward the Persian Gulf

But Russia's ambitions in Asia are not confined to the Pacific coast. For many years she has been gradually pushing her boundaries toward the warm

waters of the Arabian Sea and the Persian Gulf. After defeating the Turkoman tribes to the east of the Caspian, Russia concluded a treaty with Persia, whereby Persia agreed to Russia's control of Western Turkestan, including the oases of Akkal and Merv. This territory extended southward forming a wedge between Persia and Afghanistan, thus bringing the Russian border within sixty miles of Herat, which had been generally considered by the English as the key to India. The acquisition of this territory not only advanced Russia so much on her way to the sea but also gave her a better means of attack on India, an advantage which would be of infinite value to her in forwarding her interests in the Dardanelles as well as in Persia. Following the extension of her boundaries, Russia immediately began in every possible way to establish commercial and industrial supremacy in Persia.

But her greatest hold on that country came through her opportunity to loan Persia money. In 1892 the Imperial Bank of Persia, a British institution, loaned Persia 500,000 pounds. In 1898 Persia wished to borrow more from the same source. Conditions were satisfactory and the loan was about to be made when Russian authorities in Persia learned the facts, forbade the placing of the loan, and offered a much larger sum on the security of all the customs except those of Fars and the Persian Gulf. The Persians could do nothing but accept the Russian demands since England did nothing to prevent Russia's actions. The result was that Persia came to a large extent under Russian control. All her customs, except those before mentioned, are collected by Russians or by Belgians acting for Russia. While such advances would seem to indicate that Russia is rapidly accomplishing her purpose of forcing her way through Persia to the sea, she is by no means sure of attaining her ends, for on the southern border of Persia, England has secured a most important sphere of influence. This region itself is of little value in that it consists almost wholly of worthless desert, but it completes Great Britain's control of the coastline of the Arabian Seas and the narrow entrance to the Persian Gulf, and thereby secures the control of the gulf itself.

It would seem, then, that Russia's only hope of obtaining harbors in this direction is in her ability to compel Great Britain, either by strategy or by force, to release her hold on Persia's southern boundary.

What Great Britain's attitude toward her advance is likely to be is indicated rather strongly in a statement made by Lord Curzon, former Viceroy of India, in which he says that he would regard the cession to Russia of a Persian gulf port as an international provocation to war and would impeach the British minister who was guilty of acquiescing in such a surrender as a traitor to his country. Russia's ambitions, then, in southern Asia are blocked even more effectually than in Manchuria, where she comes in contact with the less powerful nations, China and Japan.

Later Efforts in Europe

It has already been stated that Russian boundaries in Europe are today practically what they were at the time of the Congress of Vienna, 1815, yet her attempts since that time to gain control of the waterway leading from the Black Sea to the Mediterranean have involved the Russian government in many international difficulties.

In 1829, taking advantage of an insurrection in Greece, which at that time was subject to Turkey, Russia declared war against Turkey and quickly defeated her. The chief advantage accruing to Russia in the treaty which followed was the acquisition of several provinces in Transcaucasia which served the purpose of strengthening Russia's control on the Black Sea.

In 1833 representatives of Russia and Turkey signed a compact by which Russia promised to defend Turkey against all attacks and Turkey undertook to close the Dardanelles against the navy of any power with which Russia might be at war. By this treaty Russia more nearly than at any other time accomplished her purpose of establishing a protectorate over Turkey and thus of controlling her waterway to the Mediterranean. But Russia was permitted to enjoy this power but a short time, for in 1839 owing to the Sultan's inability to control Egypt, England and France intervened, sent their fleets to the Dardanelles, and with the other three great powers of Europe issued a collective note placing Turkey under their joint protection.

Tsar Nicholas I proposed to the British ambassador at St. Petersburg that Russia and Great Britain divide the estate of the "sick man of Europe" between them. According to this proposal England was to receive Egypt and Crete while Russia was to control European Turkey. Great Britain, of course, did not agree to the proposition, for such control by Russia would inevitably lead to the occupation of Constantinople and the straits, thus opening the way for Russian warships to the Mediterranean, where Great Britain's route to India would be greatly endangered.

Following the rejection of the Tsar's proposal, the Russian government demanded of the Sultan the recognition of a Russian protectorate over all Greek Christians within Turkish provinces. The Sultan's refusal to these demands led to the Crimean War, 1853-1856, in which England and France took the side of Turkey. By the Treaty of Paris following the war the Russian boundary was changed to her disadvantage in the vicinity of the delta of the Danube; the Black Sea was made neutral ground open to merchant ships of all nations, but closed to naval vessels including those of nations owning the coasts. Clearly, this treaty was a great blow to Russian ambitions.

For a number of years preceding the Russo-Turkish war of 1877-1878 there were several uprisings of the Christian subjects of the Sultan due in some measure, it is believed, to Russian agents whose object it was to bring about such a state of affairs as would again warrant interference by the Tsar.

The atrocities of the Mohammedans during the years 1875 and 1876 led to the declaration of war by Russia in 1877. The result was a complete victory over Turkey. But again she was not permitted to reap the rewards of victory. The powers, in the Treaty of Berlin although restoring to Russia the territory in the vicinity of the Danube previously mentioned, did not allow her to acquire any control of Turkish possessions.

Viewing the present Balkan situation in the light of historical facts just enumerated, it will be surprising indeed if the powers of Europe permit any situation to arise that will give Russia free access at all times to the Mediterranean.

Conclusion

As stated at the beginning of this paper, Russia's struggle for shoreline with her neighbors in Europe, in the Far East, and in southern Asia have extended altogether over a period of about five hundred years. And what has she today to show for these struggles? In northern Europe her best harbors are closed by ice for much of the year and with one or two unimportant exceptions they lead to the open ocean only through long and narrow bodies of water easily closed by an enemy. In southern Europe her harbors are limited to inland seas, only one of which, the Black Sea, leads to the ocean, and this through straits so narrow and so fully controlled by the great powers of Europe that her route to the Atlantic in this direction may be effectually closed at any time. The northern coast of Siberia, although offering an enormous extent of shoreline, has already been shown to be of insignificant value from the standpoint either of commerce or of strategy. The eastern coast of Siberia has harbors which are free from ice only about half the year. In addition to being close to Japan, which is sure to resent vigorously any advance to more advantageous positions, the harbors on the Pacific have the further disadvantage of being thousands of miles from Russia in Europe, the center of the country's population, commerce, and government. In southern Asia she has as yet not even reached the sea and has not much promise for the future.

So, with all the efforts of the centuries, Russia has accomplished little. Her need is almost as great, indeed, perhaps quite as great as at the beginning of the struggle. Therefore, in the future as in the past, Russia's national and international policies are sure to be controlled in great measure by her need of direct and permanent access to the great oceans of the world.

The total value of the exports of the 20 Latin-American countries does not equal the value of our corn crop. The value of the exports from the United States falls but little short of being double that of the 20 countries of Latin-America, yet our exports per capita of the population are only one-third greater than those of Latin-America, and fall far short of those of Argentina, Cuba, Chile and Uruguay.

THE TEACHING OF GEOGRAPHY IN FRENCH UNIVERSITIES

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In connection with the Transcontinental Excursion of the American Geographical Society, under the direction of Professor W. M. Davis of Harvard University, a geographical conference was held at Charlottesville, Virginia. The conference met in a large auditorium at the University of Virginia, October 12, 1912. *It was an impressive gathering. There were nearly fifty of the leading geographers of Europe,—professors of geography at the Universities of Berlin, Paris, Vienna, Leipzig, Edinburgh, Geneva, Munich, Oxford, Kolozvar (Hungary), Florence, Milan, Utrecht, Christiania, Stockholm, Bern, Lille, Tubingen, Jena and many others, as well as representatives of the geographical societies of these cities and of the Royal Geographical Society of Antwerp, the Royal Danish Geographical Society, the Hungarian Geographical Society, the Imperial Russian Geographical Society and also the editors of the Annales de Geographie, la Nature, the Journal of the Royal Geographical Society of the Netherlands, and other European periodicals devoted to various phases of geography. At this conference, representatives of the leading countries presented papers on the teaching of geography in their respective lands. All of these will be published in the Proceedings of the Philosophical Society, Charlottesville, Va. The Journal of Geography will also publish several of them during the current year.—Editors.)*

IN France, geography is taught in all state universities, ordinarily by one or more specialists; in three universities of less importance, the teaching of geography is still given by an historian or a geologist.

Our universities, as you perhaps know, generally comprise four "Faculties:" medicine, law, sciences and letters. Geography is most often taught in Faculties of Letters. This calls for a few words of explanation.

When higher education was reorganized in France after the Revolution of 1789, a professorship in geography was established at the University of Paris. At that time, geography was still trying to define itself, and geology was in its infancy. The tradition of the eighteenth century was naturally continued. In that century, the French geographers had mostly devoted themselves to cartographic work, which was more pressing. While the Cattini family and their co-workers were drawing the first general topographic map of France, d'Anville subjected to severe criticism the cartographic representations of little known countries and particularly studied ancient geographers. This was a mathematician's or historian's work more than a geographer's in the

modern sense of the word. The first holder of the professorship of geography at the University of Paris, Barbie du Socage, was d'Anville's pupil. This explains why for many years geographical studies were conducted along historical lines.

I must add that, in secondary schools, the teaching of geography, nearly confined to mere nomenclature and regarded as of little importance, was traditionally united to that of history. This accounts for the fact that geographical instruction was given in Faculties of Letters. That may be regretted, for geologists, at that very time, introduced geography to new destinies. I will simply say that Dufrcsnoy. and Elie de Beaumont's *Explication de la Carte geologique de la France,* a fundamental work for the knowledge of the physical features of our country, the first volume of which was published in 1842, was not received by geographers as it ought to have been. I will not dwell any longer on the history of our geographical teaching, as this explains sufficiently why it was somewhat languishing and had to be revived.

However, it must be said that the different governments up to the present one did not favor higher education for fear of liberal ideas. So much so, that universities did not exist as such; there were only isolated Faculties of Law, Medicine and so on, which were unable to co-operate in their teachings.

In fact, the teaching of geography, as we now understand it, dates back to the reorganization of the universities, thirty years ago. In this connection, let me say that French geography owes more to the inspiration of our common master Vidal de la Blache, than to that of any other person. Since that time, the French geographers, while maintaining the tradition of strong historical training, which is particularly necessary for the understanding of human activities in our old countries, have established their teaching upon the indispensable basis of all geography, namely natural sciences. About twenty-five years ago, the Paris Faculty of Sciences established distinct instruction in physical geography which has been since transformed into a professorship, and in some other universities, the same teaching was entrusted to geologists. We now have at the Sorbonne, which is the common house of the Faculties of Sciences and Letters in Paris, two geographical laboratories, which work in harmony at the same task, or nearly so, the only difference being that the Faculty of Sciences teaches only physical geography, while the Faculty of Letters teaches both physical and human geography. Separate professorships of colonial geography have been in existence in Paris, Bordeaux and Marseilles for twenty years or so; there is also in Paris a special course of instruction devoted to North Africa.

Students in geography may take courses in both Faculties, but, in general, they are more numerous in the Faculties of Letters, as most of

them intend to become teachers in state secondary schools or "lycees," and geography is associated with history in these schools.

I have thought it necessary to enter into this detail, because foreigners who do us the honor of visiting our universities, often wonder at the apparent complication of our organization. This organization, as you have seen, is mainly an inheritance of the past, and, I trust, will be simplified in the future.

Speaking now more particularly of the Faculties of Letters, I would say first that the students seldom come to us before the age of eighteen, and after the age of twenty. All of them have completed regular studies covering at least six years in the secondary schools, with geography every year, and must have passed the "baccalaureat," which examination includes separate questions on geography. The baccalaureat is required from any person who wishes to take university degrees. Foreigners who do not want to take these are, of course, unconditionally admitted to our universities; but those who want them, must satisfy the authorities that they have received adequate secondary education in their own countries.

The new student usually devotes two years to preparing for "license" which is really the first university degree. We have not yet a special license in geography in the Faculties of Letters, but only a license in history and geography. However, as the written examination is conducted more or less on the elective plan, the student may choose almost exclusively geographical subjects, and then history becomes to him only a minor study. In the Faculties of Sciences, the license is somewhat different, in that it comprises three certificates, selected among the different sciences. The student may take, for instance, physical geography, geology and botany.

We, in the Faculty of Letters, always begin with general physical geography, including elementary earth physics, climatology, hydrology, morphology and principles of biogeography. In Paris this course covers two years. The students are expected to take at the same time a two-year course in general human geography. Finally we begin regional geography with our own country, which is sufficiently varied to offer familiar instances of most facts of interest open to easy and personal control. We also train our students in so-called "cartographical exercises" which means practice in the reading and interpretation of precise topographic maps. These exercises are, in fact, mainly intended to illustrate and supplement the other courses. Finally, weather permitting, we go with our younger students on excursions near Paris for one-half or one day.

We believe that the students who have received this kind of instruction for two years, although they may not be expert geographers, at least understand what geography is, an even this we consider a result of some importance.

At the end of their third year, the students ordinarily pass the "Diplome d'etudes superieures d'histoire et geographie." During this year, they take fewer courses with us, but are encouraged to go to the Faculty of Sciences for supplementary instruction. Their main work consists in the preparation of a memoir or thesis on some geographical subject selected by them and accepted by one of their professors. This is the essential requirement for the diploma. In spite of the name "Diplome d'histoire et geographie," history is only a minor study for those who specialize in geography. In that case, they have only to answer with some detail, on two or three points of history proposed three months in advance. The thesis being the first attempt at independent research, we consider it particularly important. The subject, in nearly all cases, is such as to be accessible to personal investigation and field work. The students ordinarily devote to it, besides the nine months of the academic year, the three preceding vacation months. This year is one of free work under the guidance of their instructors, to whom they report from time to time, often in the presence of their fellow students. Conferences are held to that effect, which give also opportunity to advanced students to discuss recent papers on various problems.

The same students, with the more advanced in the first and second year courses, participate in the annual inter-university excursion, which lasts from five to eight days, and is conducted in some part of France by the best informed of us. These annual meetings, we believe are excellent, in that they train the students to observation, reflection and discussion, while fostering at the same time feelings of good fellowship between the members of different universities. Professor Davis who conducted our excursion this year in different parts of the Parisian Basin and Mosvan can best tell you what he thinks of this institution.

The diploma is not, strictly speaking, a university degree. It is not required for the doctor's degree, but only for the Agregation, of which I shall speak presently, but nearly all of our students and even some persons not intending to become teachers of geography, take it as perhaps the best preparation for scientific work.

The fourth year of study, in our universities, is generally devoted to preparing for the Agregation. This is a competitive examination, qualifying for teaching history and geography in State secondary schools (lycees). This examination is difficult, as the number of the candidates to be admitted each year varies from ten to eighteen. It is passed before a commission of professors from different universities and lycees, with one or several inspectors of public education. It requires intense work in history and geography, and we consider it a part of our duty to assist our students in preparing for it, and thus completing their geographical education. The written examination comprises, besides three compositions in history, one

in geography, for which seven hours are granted. The subject is of a rather general character, and requires not only precise knowledge, but also skill in composition and expression. These are some of the subjects proposed in the last few years: Cotton Producing and Manufacturing Countries; the Natural Regions of India; The Great Laurentian Lakes, A Physical and Economic Study; the Sahara. The oral examination does not consist of questions to be answered, but of four forty-five minute lessons similar to those given in advanced classes in the lycees. The subjects are assigned by lot six hours in advance; and the candidates are deprived of all communication with the world, but for the books they may ask for. Accordingly we have to train our students in the art of oral presentation. We insist particularly on conciseness, clearness and order. During the same year, they make a three weeks' stay in a lycee, under the direction of an instructor and thus receive some training in actual teaching.

The Agregation is not a university degree, it simply qualifies a person for holding a professorship in a lycee. Those who intend to become university professors may dispense with it, but the doctor's degree is necessary to enter a university as instructor or professor. The only condition imposed upon a candidate for this degree is the writing of an original thesis on some subject accepted by the Faculty. The thesis is deposited in manuscript and examined. If accepted either with or without corrections, it is printed and discussed publicly before a commission of five or more professors of the Faculty.

The thesis always requires several years of work, three at least, often more. It is not a student's essay but an original piece of work, representing a substantial contribution to science. Our French theses have often been reproached not without reason for their excessive size. The blame, it seems to me, does not rest with the universities, but with the candidates who, little by little, have enlarged the scope of their work. We only expect the candidates to give evidence of their mastery in the science they profess.

This doctorate is sometimes called the state doctorate, because it is required from those who wish to teach in state universities. To those who cannot afford to spend so much time on the thesis, to foreigners in particular, we offer the so-called "Doctorat d'Universite" for which a thesis is required of the same character, but of lesser size. In addition, the candidates have to answer a few questions on subjects pertaining to their studies and assigned in advance.

To sum up, I would say that the teaching of geography in our universities presents some distinctive traits:

1. Our students have all received, before they come to the university, regular instruction in secondary schools;

2. By far the largest number of them are registered in the Faculties of Letters;

3. In consequence, they receive instruction in history at the same time as in geography;

4. The regular sequence of studies is as follows: license (two years study); diplome d'etudes (one year's study); agregation (one year or more), for those only who intend to become secondary teachers.

5. The doctorate is a thing by itself, it is not intended for students but only for more mature men, who are capable of independent research.

This system, however complicated it may appear, is simpler in practice than one would believe. The student is led step by step from simpler to more difficult problems, while he is constantly incited to intense personal effort and thinking. It would suit, we believe, advanced students from foreign countries who would spend with us one-half year or better still one whole year. I hardly need to say that foreign visitors have always been received with entire cordiality and admitted to a share in all the educational advantages we may offer them.

SOME SIGNIFICANT FACTS IN THE GEOGRAPHY OF CHINA

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CHINA interests us in a special way at the present time because, the oldest of all nations, she has adopted the form of government of the youngest of the great nations, and is entering upon an era of great development, both political and economic. The Chinese Empire consists of China proper and four dependencies—Tibet, Eastern Turkestan, Mongolia and Mancuria. China proper, although it has but one-third of the area of the Empire, contains practically all its population and wealth. This article deals chiefly with China proper. The geographic factors that have greatest significance in explaining China's development may be grouped under three heads. I. Geographical Position; II. Climate and Physical Features; III. Mineral Resources.

I. Geographical Position

Isolation by Sea.. The geographic fact of greatest influence on China's history is her almost complete isolation from the rest of the world by sea and by land. This has made possible the maintenance of her civilization practically unchanged for over 2500 years. There was no easy way for inter-communication between China and other nations. Facing the Pacific, the widest of the oceans, China had no great era of discovery such as aroused European nations when Columbus found the way across the narrow Atlantic. Furthermore, the shores of the Pacific were occupied by no other nations, except Japan with

her kindred people, that could enter into competition with China, stimulate her with new thoughts or establish trade relations. Even could some Chinese Columbus have crossed the Pacific, there would have been no such incentive to exploration and settlement as existed among the many competing nations of Europe. India held the nearest great nations, but the sea voyage to India was long and stormy and the way infested by pirates. From Canton to Calcutta is over 3500 miles—a distance greater than from Philadelphia to Liverpool. As for sea connections with Europe, even the way was unknown until 1498 and then the great distances shut out western invasion except in a very small way until well on in the nineteenth century.

Modern steamships and the Suez and Panama Canals have greatly lessened China's isolation, but they have not overcome it. Shanghai is still more than thirty days by sea from western Europe and fourteen days from western United States. These long distances will continue to affect trade and limit travel—two of the most effective agents of progress. In some ways this separation will be of benefit to China. In case of war with western countries, danger of invasion is lessened. As China develops her own industries, the far distance of competing western nations will be to China's advantage.

Isolation by Land. By land China is likewise all but completely shut out from intercourse with the remainder of Asia and with Europe by a barrier of mountains, plateaus and deserts unrivaled as a land barrier anywhere else in the world. The outer edge of this triple barrier includes the highest and most inaccessible of mountain ranges—the Himalayas, the Pamirs, the Tian Shan, the Altai, the Stanovoi. From southern China to central Asia, a distance of 3000 miles, the lowest passes have an altitude of over 10,000 ft., and many reach 18,000 ft. Inside the outer mountain barrier lie the high, cold, desert plateaus of Tibet, Turkestan and Mongolia, often 1500 to 2000 miles in width,—barriers in themselves sufficient to shut out any but the most desultory communications. The easiest routes from China to Burma successively climb to heights of 5000 to 7000 feet to cross the many intervening mountain ridges only to again descend after each ascent into deep and narrow jungle-filled, fever-haunted valleys holding the great rivers that pour out of central Asia.

In modern times these barriers have served effectively against invasion. Great Britain on the south and Russia on the west have extended their dominions to the mountain circle that forms the outer bulwark of China's natural defences; but here they have stopped.* Manchuria alone, of all the land bound-

***Russia is threatening now the Mongolian and Turkestan borderlands. Her railways have brought Russian influences to the very back doors of the Chinese Empire in the sections far remote from China itself and where Chinese influence is weakest. At the present writing, it is apparent that Russia intends to dominate outer (western) Mongolia and that England is seeking to assert her power in Tibet.**

aries, can be regarded as open. Easy passes lead from the Siberian plains into the rich Manchurian plains, which in turn open readily into northern China. It is significant that from this direction China's territorial integrity has been most threatened. Russia, stretching forth her conquering arm from western Siberia took all the northern half of the Amur valley, reached down the Pacific coast to Korea, and was gradually gathering to herself all of Manchuria when she was forced to loosen her hold by Japan.

Only through this Manchurian break in the land barriers is China directly connected by modern railway transportation with the west. The Siberian railway is becoming each year more important as a mail and tourist route to and from the Far East. Pekin is now but twelve days from London by the fastest express trains.

II. Physical Features and Climate

Surface Form. China is a mountainous country. Its ancient rocks, folded and broken and uplifted have been much worn down by the forces of erosion, again uplifted and dissected into valleys, deep, steep-sided and narrow. Only where recent deposits of wind or water-borne silt have filled up the irregularities of the surface are level areas found. Such are the alluvial deposits at the mouths of the rivers or the loess-filled valleys of the northern provinces. Less than one-fifth of the area of China is under 1000 feet in altitude and most of this is comprised in the delta plains of the Hwang-Ho and Yangtze-Kiang.

The half of China that lies west of a line drawn diagonally from the northeastern corner to the southwestern is in the high plateau and mountainous district of central Asia. This line marks a great fault or break in the earth's crust by which the region to the east sank several thousand feet. North of the Yangtze the descent from the plateaus leads suddenly down across this fault escarpment to the great delta plains, but south of this river the descent is to a lower, but still high and rugged plateau that extends across southern China to the Pacific ocean. Except in two regions, the Red Basin of Sze-Chuan and the valley of the Wei-Ho about the city of Singan, the region west of this fault escarpment is not densely populated.

The Great Plain of the Hwang-Ho delta, partly surrounding the mountainous Shan-tung peninsula, and the great delta of the Yangtze, make up the only large plain areas in China. Though large in themselves, (their combined areas being equivalent to the states of Ohio, Indiana, Illinois and Kentucky) these plains occupy scarcely one-eighth of China's surface. They support, however, fully forty per cent of China's vast population and furnish in addition a large proportion of her exported crops.

Climate. Although China lies in the latitude corresponding to that between NewYork and Santiago de Cuba, her climate has a lower average temperature and greater seasonal changes between summer and winter than the corresponding latitudes in America. Distinctly cold or cool winters are the

rule throughout China, but summers are warm. High altitudes and close proximity to the higher plateaus of central Asia with their extremes of heat and cold largely explain these differences. Under the influence of monsoon winds, China everywhere has abundant summer rains, but the winters are dry. This rainfall is heaviest in the east and south, where it is over 80 inches a year, gradually decreasing to the west and north, but no section has less than twenty inches of annual rainfall. Since the bulk of the rain comes during the growing season, agriculture is possible practically wherever surface and soil will permit.

Northern China. Based partly upon physical features and partly upon climate, China may be divided into three divisions—Northern, Central and Southern China. Northern China includes (1) the mountainous Shan-tung peninsula, which, because of its submerged coast, contains the only good harbors along the northern half of the Chinese coast; (2) the Great Plain of the Hwang-Ho; (3) the basin of the Wei-Ho, a fertile but isolated part of the Hwang-Ho valley west of the gorge through which it crosses the great fault escarpment; and (4) the high plateaus of northwestern China. In spite of this variety of surface features, north China is distinct from the rest of China in climate, soil, agricultural resources and people. Here the winters are severely cold; rivers are frozen, severe gales sweep over the plains and all farming activities cease. The summers, however, are warm and the summer rainfall is sufficient for the hardier crops. A slight decrease in the yearly rains may bring crop shortages and even famines in north China. No forests are seen covering the hills, due both to the light rainfall and to reckless deforestation that has gone on for centuries where the people require much fuel for the cold winters.

The "yellow earth," or Hwang-tu as the Chinese call it, is the most important resource of this northern section. This loess soil, made up of fine dust deposited by winds and often mixed with coarser materials and re-deposited by flood waters, covers most of the Great Plain, but in the mountainous regions it occurs only in valleys or isolated basins or as enormous drifts on mountain sides. Its fertility is indestructible, and, where suitably watered, has yielded enormous crops for thousands of years. The hardy grains, such as millet, barley and wheat, together with peas and beans, are the crops best suited to the climate of north China. These are the chief food crops. Rice is not grown. Cotton is an increasingly important money crop in the Great Plain, its cultivation taking the place of opium, the growing of which is now prohibited by the Chinese government. Oil seed crops, as sesame and rape, and tobacco make up the other more important crops.

The people of north China are larger and more robust than the people of the south. Frequent invasions of the sturdier northern races into north China and their absorption by the Chinese may account for this in part, but the dry, cool and invigorating climate has doubtless also contributed to this superior

physical development. The isolation of many of these peoples has developed in many sections of north China the strong conversatism and the bitter anti-foreign spirit of that region. Here the Boxer troubles of 1900 originated and received their strongest support.

Central China occupies the main valley of the Yangtze river. Two divisions are clearly marked: 1. The alluvial plains, a series of low, flat, silt-filled basins occupying the valley from the sea to Ichang, where the Yangtze breaks through the great fault scarp that divides eastern from western China; 2. The Red Basin, a dissected region of red sandstones that have decomposed into very fertile soils, occupying a large area in the heart of mountainous western China. The long "Yangtze Gorges," which separate these two sections are navigated with great difficulty and are so narrow that roadways have not been built along their sides. Ocean going vessels can reach Ichang, however, 1000 miles from the sea, making all the lower Yangtze the section of China most open to foreign influences. It is noteworthy that this section has been quickest to respond to western ideas and that the revolution which ended in the formation of the Chinese republic had its origin and chief support in this great valley.

With its long summers and abundant rainfall, central China is a rice-growing region and this grain is the chief food crop. Tea, cotton and silk are the great sources of profit for the farmers, and the Yangtze valley far exceeds the remainder of China in their production. Sub-tropical crops, such as sugar and oranges, are grown. The greater rainfall also makes terraced cultivation more common, and the hills are often cultivated in this way to their very summits. Two to three and even five crops are grown on the same fields each year, while one crop is the rule in much of north China. Often three crops are kept growing in the same field at one time, one between the rows of the other. The abundant rains and fertile soils, together with the ease with which the mountain streams which enter it can be diverted for irrigation, enables the Red Basin to support an exceedingly dense population, even more dense in some sections than the alluvial plains of the lower valley. The plain surrounding the city of Cheng-tu probably supports the densest population of any equal area in the whole world.

Southern China, except for the small delta and flood-plain of the Si-Kiang, is a high, deeply dissected plateau occupying more than one-third of China. Not only is south China difficult of access from the outside, but it is separated into several valleys or basins isolated from each other. Hence the inhabitants, except in the open valley about Canton, are among the rudest, the least educated and the most intractable of all China. Here are found many of the aboriginal people of China, maintaining their old customs, violently opposed to government control from Pekin, turbulent, anti-foreign, revolutionary.

The high altitude of south China compensates for its more southern latitude and gives the region a cool, sub-tropical climate. The winters are

mild, but frosts occur in practically the entire area, snow sometimes falling in Canton, within the tropics. The summers, however, especially in the low valley of the Si-Kiang are very warm and humid. The high coast lands intercepting the monsoons have the heaviest rainfall of any section of China—over 80 inches—but precipitation decreases to the west. A very wide range of agricultural crops, both temperate and sub-tropical, is found, therefore, in south China. As in central China, rice is the most important food crop, and wheat, barley, tea, cotton, tobacco, sugar cane, silk, spices and fruit are common crops. In the Si-Kiang valley rushes for making matting is a large crop. Because of its rugged surface, however, agriculture is limited in extent. The narrow valley bottoms are intensely cultivated. Hillside terracing—a practice which reaches its highest stage of development in the high lands of southeastern China—has partly overcome the disadvantages of rugged surface. Many of the southern provinces, however, even those that are relatively sparsely populated, produce with difficulty enough food for their own people. It is not strange therefore that most of the Chinese who leave their own country to live abroad come from the hilly lands of the southeast.

Forest products and timber are more abundant in south China than elsewhere in China. Here the climate encourages tree growth and the remoteness of many forests from dense populations has prevented deforestation. Large supplies of timber are brought out of the interior and the forests are fast disappearing.

III. Mineral Resources

China is rich in valuable minerals, but the true extent of these resources has not been determined. The geologic history of the country,—the mountain-making forces that have acted on its ancient sedimentary and crystalline rocks—furnished the conditions favoring mineral deposition, while subsequent denudation of the mountain masses has made the minerals accessible. There is not a single province that does not possess rich mineral deposits. Coal, iron and copper—the minerals of greatest economic value to a modern nation—are very abundant.

Every province is known to contain coal but the largest known field is the Shan-si field of north China, which holds vast deposits of both anthracite and bituminous coal. While modern coal mining has been begun in two or three localities along the eastern border of this field, its actual size is unknown. The oft-quoted estimates of the German geologist, Richthofen, that these anthracite beds are "sufficient to supply the whole world for thousands of years," is undoubtedly far too liberal.

Second in importance to the Shan-si coal fields are those of southern China centering in Hu-nan. These fields contain large supplies of coking bituminous coal and are being mined for use of the great iron furnaces at Hankow and for shipment down the Yangtze. The Red Basin is said to be un-

derlain with coal, but the extent of this field is absolutely unknown. Small fields of both anthracite and bituminous coal occur in the vicinity of Pekin and on the Shan-tung peninsula and here in these more accessible regions have been developed the most extensive mining operations in China. Chinese coal from near Pekin has been exported in recent years to our own Pacific Coast.

Petroleum and natural gas are believed to occur in large amounts in the Red Basin and other sections. The Chinese have used natural gas in evaporating salt from brine wells for thousands of years.

Iron, like coal, is widely distributed and is often closely associated with the coal regions. Shan-si contains considerable deposits that have supplied the local needs of the Chinese for hundreds of years, but probably the most important resources are in the province of Hu-nan and Kiang-si, near the coal fields of this region. Already these deposits have formed the basis of an important iron industry at Hankow and from here are shipped iron ore and pig iron to Japan and to the Pacific Coast of the United States.

South China is also very rich in many other metals, the most important being tin, copper, antimony and mercury, all of which are being mined to some extent and exported. Lead, zinc, gold and silver are known to occur in considerable quantities.

These resources of minerals, capable of furnishing both mechanical power and raw materials for industry, added to the already productive soil, insures, in the hands of China's vast population of industrious and intelligent people, the development of a manufacturing industry of almost inconceivable magnitude. The economic changes that will result will be no less great than the political changes which are now transforming the most absolute of monarchies into a republic with modern ideas and ideals.

THE PORT OF SHANGHAI

By GEORGE L. COLLIE,
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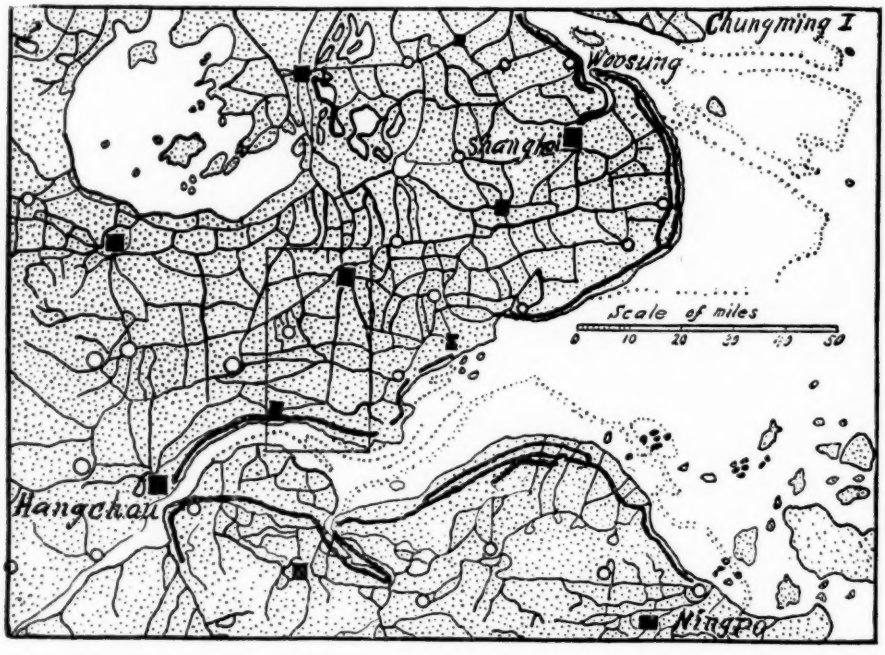
Situation and Surroundings

SHANGHAI is situated on the left bank of the Hwang-p'u River, a tributary which enters the estuary of the Yangtze-Kiang, about eleven miles to the northeast of the city. The word Shanghai means "On the sea," and it is supposed that it once stood near the sea shore; if so, it is now some distance inland; for it is sixty miles south of the North Saddle light on the north outer bar of the Yangtze, and thirty-two miles from Tungsha lightship on the south outer bar. Shanghai is an ancient port; it was made a customs harbor as early as the year 1000 A. D.

The Hwang-p'u is a tidal river, which drains the flat delta plain between the important cities of Chin Kiang on the north and Hang Chow on the south.

This alluvial plain is one of the marvelous areas of earth and worthy of an extended description. There are upon it, endless villages of stone or mud houses, standing in rows; often thirty or forty of these villages may be seen at one time. Canals intersect the plain in every direction, and boats, often with sails spread, traverse them back and forth; at a distance they look as if they were sailing through the fields.



SKETCH MAP OF SMALL SECTION OF EASTERN CHINA
Representing about 2700 miles of main canals and over 300 miles of sea wall (heavy black lines near coast). The area here shown contains not less than 25,000 miles of canals [After King, *Farmers of Forty Centuries.*]

On the plain dwells a population with an average density of 800 to the square mile, a people of prodigious industry and resourcefulness. The writer crossed this plain several times during the late fall; at this season some of the peasants are engaged in gathering hay and straw, which they heap in great stacks about their houses. Others are plowing their fields with crude wooden plows drawn by water buffaloes; others are planting rice in the flooded fields. Some are thatching their houses, others are tending their gardens. Many are fishing in the canals or even in the fields, pushing themselves about in their curious tub-like boats.

Here and there on the plain are ancient ruins, fine, old stone gateways, decayed temples and monuments, relics of another civilization. Narrow roads traverse the plain; they are but foot paths elevated several feet above the fields, necessarily so to keep them out of the water at flood time. Along these im-

memorial paths there walks an endless procession of blue-clad peasants, pushing their creaking wheelbarrows loaded with all sorts of produce or carrying incredible loads across their shoulders by means of the familiar bamboo pole. Along the canals the trackers are towing the heavily loaded canal boats to market, shouting the curious sing-song chants with which they enliven their tedious and weary way.

Importance of the Port

Shanghai lies in the midst of this busy country, in the midst of this delta plain with its boundless fertility, constantly being renewed with silt dredged from canal and river. The greatness of Shanghai as a port is due in part to the resources of the surrounding plain with its great population. Another factor which causes Shanghai to be important is its situation at the mouth of the Yangtze-Kiang, the principal commercial river of China and one of the great arteries of trade in the world. It is estimated that one-half the sea borne commerce of China is distributed by means of this one river; in other words the commerce which supplies one-eighth of the world's population passes the threshold of Shanghai. This immense volume of trade greatly quickens the life of the city and in spite of certain drawbacks, is destined to make it a harbor of increasing importance, one of a half-dozen great world ports.

Another item in the making of Shanghai is its central position on the coast of China, midway between Hong Kong and Tientsin. This central location together with its proximity to the Yangtze causes it to be the great terminal and trans-shipping port of China. It is the terminus, practically, of all the great European steamship companies trading with the Orient, and most of the trans-Pacific steamer lines make the city their headquarters. It is also the center of the vast coastwise traffic of China, which extends from Vladivostok on the north to Singapore on the south.

At Shanghai too is transferred from ocean steamer to river craft the vast inland commerce destined for central China.

Characteristics of the Port

By reason of its situation, Shanghai is one of the most cosmopolitan cities on the globe. It has a Chinese population of 600,000 and in addition it contains many foreigners, more than any other eastern city; their numbers are about 15,000. Every race and nationality are represented, the streets are policed by Sikhs from India; Japanese, Hindoo and Malayan tradesmen compete with native merchants, while sailors from every quarter of the globe may be met in the crowded streets. The center of life in the city is the Bund, a broad avenue, which fronts the river and lies parallel to it for a distance of two miles. It is a beautiful street, the most attractive one, perhaps, in the Orient, with its parks and flower plats, with their vistas of the river beyond. On one side of the Bund are the landing stages and docks of the steamer companies, on the other are the godowns (Warehouses), offices, clubs, hotels and consulates.

The loading and unloading facilities in so far as machinery is concerned are rather meagre. Most of that work is done by coolies, who perform the labor more cheaply than it can be done by mechanical means under present conditions. They unload the steamers, put the cargo on wheelbarrows or carts and push them over to the godowns. On account of a troublesome bar at the mouth of the Hwang-p'u some of the larger ocean steamers do not come up to Shanghai but discharge passengers and cargo at Woo-sung, an outer port, which has grown up at the mouth of the river. Most steamers, however, proceed up to Shanghai, though they must wait for favorable tides to cross the bar at Woo-sung. There are not many good berths for ocean steamers at Shanghai and most of them anchor out in the river, discharging and taking on cargo by the aid of lighters, which the coolies scull or sail to the shore.

There is not much room in the river, and it is crowded with shipping; the shore on the Shanghai side is lined chiefly with steamers engaged in the Yangtsze trade, while out in the river are anchored ocean steamers, both freight and passenger, tramp steamers, war vessels and ships. Ferry boats and sampans dodge back and forth across the stream, while an endless procession of Chinese junks sail up and down. Shanghai is intersected by canals and tidal creeks, these too are jammed full of canal boats, sampans and small river craft.

Port Regulations

A phase of harbor management that has not been considered in this series has reference to the rules which govern all shipping that enters the harbor for any purpose whatever. Some of the rules of Shanghai harbor are given here as illustrative of the general purpose and importance of such rules.

1. The place where foreign vessels can moor is determined by the berthing officer. Vessels cannot shift assigned berths or mooring places without permission, unless outward bound and having clearance papers.

2. Vessels must exhibit proper lights at night.

3. Mooring chains and cables must be clear to allow shifting and swinging of the vessel by the tides.

4. When moving from one berth to another vessels must exhibit a black ball two feet in diameter at its mast-head, while a black ball four feet in diameter must be shown on the wharf to which the ship is going. This is done to announce to all shipping in the harbor that a change is to be made.

5. No vessel is allowed to sound sirens, while in the harbor, except for purposes of signalling.

6. Vessels on entering the river at Woo-sung must signal their number that their arrival may be reported at Shanghai.

7. No vessel may cross the bar at Woo-sung unless the signals show a proper depth of water; nor may one large steamer pass another in the channel by overtaking it; nor may any vessel anchor so as to obstruct the principal channel.

8. All vessels entering the Hwang-p'u with the intention of discharging cargo at Shanghai must run up the proper flag at the mast head so that the customs officers may know and come aboard to inspect the cargo. There are many other regulations but these will suffice to show their general tenor.

Future of the Port

There is growing up at Shanghai a large manufacturing section, established for the purpose of working up the raw materials, which naturally pass through the harbor, this is especially true of silk and cotton. These large mills now in operation and to be built will add greatly to the prosperity of the city. The development of railways already planned or now in operation will materially assist the growth of this port. The desirability of Shanghai as a place of residence will also be a factor in the upbuilding of the city. As China progresses, its trade and commerce are bound to increase and Shanghai, now the greatest port of China, will continue to profit by the advance of business and will doubtless hold its present supremacy. Two factors, however, are likely to modify this prosperity to some degree, one is the gradual silting of the river, which is bound to interfere with navigation by large vessels, unless it can be remedied by engineering. The other is the fact that Hankow and other ports on the Yangtze are developing direct commercial relations with foreign countries; this commerce will be carried by steamers, which do not stop at Shanghai. These things will interfere somewhat with the advance of the port but in spite of it all, Shanghai will continue to be the great gateway of China.

NOTES ON CHINA*

Use of the Rivers

IN the absence of good roads and draft animals the utmost use has been made of the countless waterways and there are probably as many boats in China as in all the rest of the world. Nowhere else are there such clever river-people, nowhere else is there so lavish an application of man-muscle to water-movement. The rivers are alive with junks propelled by rowers who occupy the forward deck and stand as they ply the oar. Sixteen or eighteen rowers man the bigger boats and as, bare to the waist, they forge by in rhythmic swing, chanting their song of labor the effect is fine. Save when there is a stiff breeze to sail with, the up-river junks are towed along the bank, and, as no tow-path has ever been built, the waste of toil in scrambling along slippery banks, clambering over rocks or creeping along narrow ledges with the tow-rope is distressing to behold.

In the South population is forced from the land onto the water and myriads pass their lives in sampans and houseboats. In good weather these poor families, living as it were in a single small room with a porch at either end, seem as happy as people anywhere. There is no landlord to threaten

*From *"The Changing Chinese,"* by Prof. E. A. Ross.

eviction, no employer to grind them down, no foreman to speed them up. There is infinite variety in the stirring life of river and foreshore that passes under their eyes; the babble and chatter never cease and no one need ever feel lonely. The tiny home can be kept with a Dutch cleanliness, for water is always to be had with a sweep of the arm. They pay no rent and can change neighbors, residence, scenery or occupation when they please. No people are more natural, animated and self-expressive, for they have simplified life without impoverishing it and have remained free even under the very harrow-tooth of poverty.

The Loess Deposits

Some of the most characteristic impressions of China are connected with the great loess deposits that mantle the larger part of north China to the depth sometimes of hundreds of feet. Geologists interpret it as an accumulation of the dust that the prevailing winds blowing from the arid interior of Asia have sifted over the country. It is unstratified, splits vertically, contains land shells but no marine shells, and shows vertical tubes as big as a needle which are supposed to have been left by the decay of the roots of the grass that clothed the surface as the deposit slowly built up. Where this mantle of dust fell on the mountains it was soon worn thin so that the bones of the land protrude. But what has been washed from the steeper slopes has settled about their base, filled up the lesser depressions and softened the original outlines of the country.

The streams have cut down through the loess and are all deeply stained with its characteristic brown-yellow. Sweeping along so much of it they cannot maintain a free channel for heavy navigation and after they debouch upon the plain they are prone to choke their bed and shift their course. It is the loess that gives us Yellow River, Yellow Sea, Yellow Emperor (Hwang-ti) and makes yellow the imperial color. The northern half of the Peking-Hankow Railway traverses a vast yellow universe with scarcely a stone, hill or tree. The soil and the streams are yellow, the flat-roofed houses are yellow, the walls of cities and villages are yellow. The air is yellow with dust, the vegetation is coated with it, the yellow people and their clothing are powdered with it, and everything melts into the most monochrome countryside peopled by civilized men.

The loess slices like cheese and after three or four years the marks of pick and spade are still plain on the sides of the railway cuttings. Hence most of the people in the mountains house themselves simply by digging a cave in a bank which when plastered gives them a clean, dry habitation, warm in winter, cool in summer, and excellent in everything save ventilation. Some of these have two or three stories, boast framed windows and doorways, and are well furnished. It is rather startling, however, to look over a broad flat country checkered with fields in a state of high cultivation and see no roads,

houses, people or domestic animals. The roads have cut their way into the loess and run at the bottom of canyons sometimes seventy or eighty feet deep. In the cliffs that line the roads and watercourses the viewless population have carved their dwellings and stables.

The Great Wall

The Great Wall is undoubtedly the grandest and most impressive handiwork of man. Beside its colossal bulk our boasted railway embankments and tunnels seem the work of pygmies. Save the Pyramids of Egypt and the Panama Canal there is no prodigy of toil to be mentioned in the same breath with it. The brick and stone in every fifty miles of this wall would rear a pyramid higher than that of Cheops—and there are at least seventeen hundred miles of it! At Nankow Pass the wall is wide enough for seven or eight men to march abreast along its top, twenty feet high, faced with hewn stone, battlemented, and is strengthened every forty or fifty rods by huge towers ten yards inside. It clambers boldly up the steepest slopes, creeps along the sheer precipices, and springs from height to height leaving a square crenellated tower on every crown. It follows the comb of the mountains in order that the ground may slope from it both ways. It zigzags from crest to crest, dips into ravines and reappears mounting the range beyond, so that it is seen in fragments, the linking parts being hidden in the defiles. For perhaps thirty miles the eye follows this serpent in stone now streaking up the slopes, now passing across the line of vision defined against the black of the mountains beyond, now cutting the afternoon sky with its battlements as it follows some distant ridge. To the north the mountains drop away into foothills each crowned with its watch-tower. Then a plain, another range of mountains with another wall, and, beyond, the bleak wind-swept plateau of Mongolia.

Coal in China

The Province of Shansi is fat with minerals which may make it a center of industrial energy after glowing Westphalia and Belgium and Pennsylvania have become a cinder. Once, looking down five hundred feet from the road, I counted in the side of a ravine seven veins of clear coal separated by limestone strata. Here and there one comes on workings where the natives burrow timidly into hillsides and bring out the coal on all fours. Near the pit, good lump coal sells for seventy-five cents a ton, whereas a hundred miles away the same coal sells for seven times as much, showing a transport cost of four-and-a-half cents a ton-mile. A railroad down the valley of the Fen would cut this to one-tenth and put an end to twenty-five cent wheat and flour half a cent a pound.

Chinese Money

Coined silver does not circulate, but one carries rough lumps which the dealer accepts according to the verdict of his own scales. On converting them into coin you visit all the money-changers and deal with the one with the most

liberal scales. The money of the country is perforated brass cash on strings, two hundred to the string. Ten strings are worth a dollar, and weigh from fifteen to twenty pounds. Once when, according to our contract, we paid each of our coolies the equivalent of forty-three cents, they were so loaded with what is beyond all question "filthy lucre" that next day they could hardly carry us.

THE MESSAGE OF DENMARK*

By GEORGE S. WEHRWEIN,
University of Wisconsin, Col. of Agr., '13

IF a line were drawn across the map of Wisconsin touching the southern border of Lake Winnebago, the twenty-four countries south of that line will have an area equal to that of the little country of Denmark. Imagine it in the latitude of Labrador—a low country, with a poor, sandy soil, with large parts covered by sand wastes and heath land, and you will have a picture of the unpromising natural features of Denmark. There is but little timber, no coal or water power, and yet the per capita wealth of Denmark exceeds that of France, Germany, or any other nation on the Continent. Her wealth lies in her agriculture. The little area of fifteen and one-half thousand square miles exported in 1911, 198,000,000 pounds of butter, 252,000,000 pounds of bacon, and almost 18,000,000 dollars worth of eggs. The exports of Denmark average for every acre of land in the Kingdom, ten dollars.

Denmark owes her remarkable success to three factors: First, to the fact that her farmers are landowners (and not tenants); secondly, to her schools; and thirdly, to her system of co-operation.

Landowners, Not Tenants

It is a well known fact that a land-owning farm community has a certain solidarity and permanency that is rarely possible in a tenant-farming state. Denmark is fortunate in this respect. Only ten per cent of her farms are operated by tenants. In contrast, the best settled counties of Wisconsin have over 20 per cent of tenancy. Although Germany's farmers went through the same evolution as Denmark's—from serfdom to freedom,—yet Germany developed a class of landless rural laborers. Denmark did not. When this danger threatened she passed her Agricultural Holding Act, whereby a laborer having one-tenth of the purchase price, may borrow the money from the state to buy a farm of his own.

The Development of Education

The second factor in Denmark's success is her school system, especially her rural high schools. Only eleven of these were in existence before the disastrous war of 1864, when Prussia and Austria robbed her of Schleswig-Holstein. The war brought its lessons. Inspired by Bishop Gruntrig, she set

*An oration delivered at the commencement exercises of 1913.

out to develop the greatest of a nation's resources—her common people. Within ten years after the war, forty-three of these high schools were established. Today there are a hundred. Besides these there are the common schools, numerous industrial schools, and over twenty agricultural colleges, in an area one-third of the size of Wisconsin. There are extension courses and short courses; and even special schools have been established for the poorest of farmers and laborers.

The result is that in no part of the world is illiteracy so rare. This education, too, is responsible for the unity and intelligence which make co-operation possible, and this is the third factor in Denmark's success.

The Success of Co-operation

In the eighties, Denmark, like the rest of Europe, found her agriculture threatened by the enormous grain production of America and Australia. English farms were turned to pastures, Germany tried to keep out of the cheap grain by a tariff wall, but Denmark saw that there was a demand for dairy and meat products in the populous cities of England, and turned her attention to butter, bacon, and eggs.

But in changing to this type of agriculture she encountered several difficulties. Denmark is a country of small farms. Fully one-half are from two to three acres. Under such conditions of small scale production the farmer is at a tremendous disadvantage in marketing and exporting. First, the amount for sale by each farmer is small; secondly, it is likely to be inferior in quality and not uniform in character; thirdly, middle men take over manufacturing, concentrating and exporting and in time become masters of the situation.

But Denmark avoided all these difficulties. Her farmers solved the question of small scale production by co-operatively building large commercial creameries of which there are twelve hundred in existence today, handling the product of ninety-five per cent of the farms. Six years after the erection of the first creamery in 1882, they began to build co-operative bacon factories and in 1895 started the first egg export association.

As to the second point, quality, Denmark yearly receives seven and a half million dollars more for her products than does any other country for the same quantity. This is also a result of co-operation. For instance, the creameries prescribe the minutest details of feeding the cows and handling the milk, so that a perfect product may be assured. A national trade mark has been adopted which is stamped upon all Danish products. A trademark association composed of the co-operative enterprises is given the power to inspect these products even in transit, and by means of secret numbers traces the inferior product back to the farm or factory that produced it.

The Danish farmer is not only producer, but is his own exporter. Co-operative export associations place Danish products directly into the hands of the British wholesaler or co-operative store—perfecting one of the finest

economics in marketing in the world.

The Dane not only sells but buys co-operatively. Great co-operative supply associations have stores in every village. He has organized horse, cattle and poultry associations. In short, wherever there is a human want the Dane has supplied it through one of the four thousand co-operative enterprises now in existence.

We of Wisconsin can learn from Denmark that we, too, must maintain a land owning community of farmers. We must further develop through education an intelligent and self-reliant people. We must aim to better the quality of our products, and produce economies in our marketing system. Co-operation has done this for Denmark and has made possible the rich, cultured, rural life that is hers.

There is an inspiration in the thought that our rural life may likewise be bettered, that our products may one day bear the stamp "Wisconsin" and that that may be a guarantee that their quality is unsurpassed in the world!

GEOGRAPHICAL REFERENCE BOOKS

Teachers who are working in the field of Commercial Geography constantly feel the need of down-to-date information. In the very nature of the case, this can not be looked for in text books, except immediately after their publication. However, there are many reliable sources of information which are issued annually and so are annually revised to accord with the most recent facts.

The Statistical Abstract of the United States is issued annually by the Bureau of Statistics, Washington, D. C., and is distributed free. Every school library may have a copy, and individual teachers usually may secure one for the asking. These annual volumes contain an enormous amount of information, well organized and indexed. The principal departments are: (1) Area, Natural Resources, and Population; (2) Agriculture, Forestry, and Fisheries; (3) Manufacturing and Mining Industries; (4) Occupations, Labor, and Wages; (5) Internal Communication and Transportation; (6) Merchant Marine and Shipping; (7) Foreign Commerce; (8) Internal Commerce; (9) Commerce of Noncontiguous Territory; (10) Prices; (11) Consumption Estimates; (12) Record of the Progress of the U. S.; (13) Statistics of the Principal Countries of the World. (Total, 800 pp.)

The Bureau of Statistics also issues a volume entitled *Statistical Abstract of Foreign Countries.* This deals wholly with commercial matters, and is purely statistical. This report is issued in smaller editions and might not be obtainable by individual teachers, though school libraries are, as a rule, able to secure it.

The Interstate Commerce Commission, Washington, D. C., issues an annual report on *Statistics of Railways in the U. S.* This is very detailed and would not be especially useful in school libraries, but can be secured free, if desired for special use, such for example, as preparing for a debate or working up a special topic.

Most complete reports on the Mineral Resources and Industries are contained in the annual volumes on *Mineral Resources of the U. S.* There are two volumes issued yearly,—I. METALS, and II. NON-METALS. While the major part of the report is devoted to the United States, much information is also given regarding foreign countries. These reports may be obtained from the Director of the U. S. Geological Survey, Washington, D. C.

The Department of Agriculture, Washington, issues an annual called the *Year Book of the Department of Agriculture.* It contains papers on agricultural topics and statistics of farm products, also some information regarding Agriculture in Foreign Lands.

At the present time, the Bureau of Census is issuing a series of very useful bulletins on the different states. Each one contains the 1910 census reports upon Population, Agriculture, Manufactures, and Mining, for the state under consideration. Teachers will find this a handy report. Secure your own state's bulletin before the edition is exhausted. Address Bureau of the Census, Washington, D. C.

Senate Documents, Vol. 9, 61st Congress, 3d session, is a *Dictionary of Races and Peoples.* It may be secured through your U. S. Senator and possibly through your representative in Congress.

Volume 15, Senate Documents, 62d Cong., 2d session, is the *Final Report of the National Waterways Commission,* 579 pages.

Volume 78, House Documents, 61st Congress, 3d session, deals with the *Reclamation of Arid Lands.* 197 pages.

The World Almanac, issued annually by the New York World, contains 800 pages of timely information upon an immense variety of topics. It sells for 35 cents (by mail).

The Tribune Almanac, published by the New York Tribune is similar to the World Almanac, but not quite so large. 25 cents.

The British Almanac is an annual issued by Cassell and Co., Ltd., London and New York. It contains 400 to 500 pages of facts and figures pertaining especially to the commercial, industrial, political and colonial affairs of the British Empire.

The International *Whitaker's Almanac* is similar to the other almanacs mentioned above, but is larger than the British Almanac. It is issued by Joseph Whitaker, London; 50 cents and postage.

The International Year Book is issued as an annual supplement to The International Encyclopedia. It is properly called "A Compendium of the

World's Progress for the Year." It is published by Dodd, Mead and Company, New York.

The Britannica Year-Book, 1913, is "A Survey of the World's Progress Since the Completion in 1910 of the Encyclopedia Britannica, 11th Edition." It may be obtained of the Encyclopedia Britannica Co., New York. Thin paper. Cloth bound.

Many foreign nations issue yearly summaries of events and statistics, usually called year books. The *Canadian Annual Review* is published by the Ann. Review Pub. Co., Toronto. 700-800 pages.

The *Official Year Book of Australia* is issued by the Commonwealth Bureau of Census and Statistics, Melbourne.

Probably the most used and most satisfactory of all of the statistical year books are the *Statesman's Year Book* (1400 pages), covering all of the countries of the world, and the *American Year Book* (800 pages), dealing with American affairs. The former is published by the Macmillan Company, New York ($3.00), and the latter by D. Appleton & Co., New York ($3.50).

RECENT PUBLICATIONS

GERMANY AND THE GERMANS, by Price Collier. Charles Scribner Sons, New York, $1.50.

The book is notable for its frankness; the author bestows praise lavishly and criticism fearlessly but always kindly. He likes his German friends. He has studied with them, drunk with them, dined with them; he admires the rigid grind of their schools but declares that "they are producing a race of first rate clerks and skilled mechanics who are working hard to enrich the Jews." He scores their careless manners, slovenly dress and ungallantry toward women, and declares that most of them need more scrubbing and more exercise. On the other hand, he holds that the Germans are better fed, better clothed, better cared for and have more opportunities for rational and esthetic enjoyment than either Americans or Englishmen. He extolls the German army as a school of manhood, and condones the drinking, duelling and loafing so prevalent among University students; he calls the German Army the greatest factor next to the British Navy in maintaining European peace.

You admire the breadth of view, the keen power of observation and analysis, the breeziness and good nature which prevade the book, but you are likely to object to his sneering attitude toward the peace movement, his laudation of the military spirit and his thrusts at Christianity. You think that you find many contradictions but the author denies them in his conclusion. As you read you are almost bewildered by the swift changes; first you think the author has become a worshipper of everything German, then instantly he declares that with all its excellence the whole German political, social and educational

system is forced, unnatural and productive of mediocrity.

The book is full of facts as well as opinions and the chapters on "German Problems" is a splendid presentation of the conditions which Germany is now facing and must continue to face. When you have finished the book you are sure that whatever it is, it is not dreary or common place.

FARMERS OF FORTY CENTURIES, or Permanent Agriculture in China, Korea and Japan, by F. H. King; pp. 441; illustrations 248; $2.50 postpaid. Published by Mrs. F. H. King, Madison, Wis.

A new sort of description of the Orient offering a welcome variation from the written generalizations of the average traveller. A book written to teach a lesson to English speaking nations and to hasten a mutual understanding between oriental and occidental peoples. To this end generalities are conspicuously absent. Instead we find page upon page of the most detailed observations of an eminently fitted observer, observations which help us to understand how these countries have for thousands of years maintained dense populations and still retain the fertility of their soils. If any adverse criticism of this book were to be attempted it would be that the very wealth of Prof. King's observations led him to introduce in places details which would be more germain under other headings.

The subject matter, though arranged in a somewhat chronological order following the progress of the author on his tour, falls largely under the following headings, 1, Conservation of natural resources; 2, social characteristics of the peoples; 3, special industries, and 4, descriptions of regions.

The conservation movement in the Orient is the result of necessity due to press of population upon the limits of the food-supply. It extends to the use of their forests and fuel supplies, the treatment of their soils, the uses of their inland waters and other minor things. Conservation of forests and fuels lies chiefly in the habit of these peoples to utilize materials which with us would be waste even under the most conservative practices. However, Prof. King shows that some of the Chinese at least practice forest planting. Customs relating to the maintainance of soil fertility occupy a large share of the author's attention. The complete utilization of animal and human wastes, green manuring, crop sequence and methods of cultivation are frequently discussed; likewise is the increase of soil area by terrace farming and made land. The uses of waters by canalization and for irrigation and as a source of food and fertilizer are also often noted. Under the head of special industries chapters are devoted to the production of rice, silk and tea.

The foregoing and many other points have great significance to the teacher of geography and no book of recent times is better able to show exactly how these peoples live, moreover the geographic element proper features largely in the discussion of the various regions. V. C. F.

MAN AND HIS CONQUEST OF NATURE. By Marion I. Newbigin. 175 pp. 4 1-2x7. London, 1912. A. & C. Black; also The Macmillan Company, N. Y.

A little book of 12 short chapters. The author, in the first lines of her preface, frankly expresses her indebtedness to French geographers, particularly Professor Brunhes, for a considerable proportion of the material upon which the book is based.

The book presents little that is new either in material or in point of view. New examples of established truths are presented and old ideas are phrased in different language. At times the style suggests that the author wrote for youthful readers. A fling is taken at an American geographer who is charged with having "severely attacked modern methods of teaching geography on the ground that he found that many college students proved unable to state the exact position of the lake of Skaneateles and the mountains of Ouachita." It is to be hoped that most of Miss Newbigin's interpretations are less loosely made than this one.

The handy size of the book and the fact that it forms an additional contribution in English to modern geography, make it welcome.

PECULIARITIES IN THE EXPORT TRADE OF LATIN AMERICA

Of MEXICO's 150 million dollars of exports, 65 per cent are minerals. The United States takes about four-fifths of the total exports of the country, and supplies the major part of the imports.

In 1911 CUBA exported products to the value of 123 million dollars, 80 million of which was sugar and 30 million tobacco.

Of GAUTEMALA's 11 millions of dollars in exports, coffee made up over 9 millions. Coffee constituted 80 per cent of the exports of SALVADOR, 60 per cent of those of NICARAGUA, but only 30 per cent of those of COSTA RICA, whose largest export is bananas (50 per cent).

The exports of ARGENTINA are more largely the products of the vast grazing lands of that country than of the agricultural lands. Of 315 million dollars in exports 163 millions consisted of animal and meat products, wool being the largest single item in this group.

Five-eighths of BOLIVIA's 32 millions of exports are tin. Nearly 90 per cent of CHILE's exports is nitrate. BRAZIL exports 325 million dollar's worth, nearly 200 million of which is coffee and 75 million of which is rubber.

ECUADOR's chief export is cacao which constitutes 60 per cent of the total.

PERU, more fully developed by foreign capital and enterprise, has a more varied export trade. No single item dominates, but minerals lead, with sugar, rubber and cotton following.